TEARFUND

Baseline Survey Report
Ed Daein, East Darfur
June 2014

Picture: Human's drinking water from same source as animals in Ed Daein, East Darfur

Report By
TEARFUND, Ed Daein-East Darfur

List of Abbreviations & Acronyms

CLTS	*Community Led Total Sanitation*
HH	*Household*
IDP	*Internally Displaced Persons*
KAP	*Knowledge and Practice*
NGO	*Non Governmental Organisations*
TF	*Tearfund*
UN	*United Nations*
VIP	*Ventilated Improved Pit latrines*
WASH	*Water and Sanitation and Hygiene*

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1.0 Executive Summary

Tearfund's programme in Sudan began in 2004, responding to emergency needs generated by conflict. During this time, Tearfund's projects have provided critical services to people in some of the most isolated, insecure and badly affected areas of Darfur. Tearfund has combined the delivery of life-saving emergency responses in nutrition, water, sanitation and hygiene with longer-term help for communities in food security, education infrastructure and community development. Additionally, Tearfund has repeatedly responded to new emergencies in its area of operation. Tearfund continues to respond to local emergencies as and when they impact on the vulnerable in East Darfur, but recognise the need to contribute to sustainable, durable solutions that promote recovery and resilience. Due to a relative improvement of the security situation in Yassin Locality, inadequate local access to basic services and recognising few humanitarian agencies exist in that part of the state, Tearfund is in the process of establishing a project within Yassin, moving further towards recovery, as opposed to direct humanitarian service delivery. The incidents of Muhajiria and Labado early April 2013 and Um Gonia and other villages in south of Nyala March 2014 have led to the displacement of an estimated 2,200 households to Yassin, Abuhadeed and Selayleh areas. The IDPs in these locations do not have adequate health services and WASH facilities and are therefore forced to share all services with host community. Currently the IDPs and host communities are exposed to great public health risks as a result of this displacement. Following inter agency needs assessments carried out in 2013 and 2014 respectively Tearfund is currently providing WASH services in these localities. Based on this background Tearfund undertook a baseline survey in order to establish the WASH baseline situation Yassin, Abuhadeed and Selayleh locations.

The overall objective of the baseline survey was to establish the baseline situation in terms of hygiene promotion, water supply, excreta disposal, vector control, solid waste management and drainage purposely to provide benchmarks and standards for future program assessment, monitoring and evaluation of WASH programs in Yassin, Abuhadeed and Selayleh locations. Specifically the baseline survey aimed at establishing current hygiene knowledge, attitude and practice among the programme beneficiaries, in the Yassin, Selayleh and Abuhadeed..The baseline also aimed conducting observation of hygiene practices in the beneficiary households and assessing the levels of impact of the current hygiene promotion programs at the household level.

The data collection process commenced on 16th June 2014 and ended on the 19th June 2014. A total of 19 enumerators drawn from the targeted localities were trained to undertake the survey. The team interviewed a total of 377 household respondents. Appropriate sampling methods were employed during the baseline survey with 377 households participating. The household survey sample was based on stratified random sampling from a universe consisting of IDPs and host community residents within Yassin, Abuhadeed and Selayleh locations of the program area. A cluster random sampling was applied for the data collection. Numbers of clusters were selected on the basis of households and population. Random sampling was applied for the selection of household. To ensure homogeneity, the enumerators were instructed to cover the localities by following systematic random sampling.

Majority 53% of the respondents interviewed during the baseline survey were from Yassin locations, 19% from Selaha and 28% were from Abuhadeed locations respectively. 69% of the households interviewed comprised of between 6-10members,18% between 1-5 household members, 11% between 11-15 members and only 2% comprised of between 16-20 members. 69% of the households interviewed

were headed by males (farther) and31% were female headed (mother).The baseline survey finding revealed:

- 97% of the household respondents interviewed had not attended any hygiene education sessions at the time of the baseline survey.

- 49% of responders know 3 out of 5 critical times of hand washing with soap and 51% do not know 3 out of the 5critical hand washing times.

- 34% of the households administered to during the baseline survey. It was however observed that 66% of the households in Yassin, Abuhadeed and Selayleh locations did not have any soap and water at the hand washing locations.

- 78% of the household responders use water and soap for their hand washing, 15% use water only, 5% use water and clean sand and 2% use water and ash.

- 68% of the households interviewed during the survey do not store their drinking water safety in clean containers and only 32% of the households store their drinking water safety in clean containers.

- 42% of respondents store their drinking water in Jerry can, 17% in the water pots, 35 in the barrels and 6% store their drinking water in the leather containers (Girba).

- 71% of the respondents defecate in their household latrine, 16% defecate in open fields, 12% use shared latrines and 1% of the respondents defecate near their houses. It is noteworthy to mention that a significant proportion of the interviewed households practice open field defecation making the locations vulnerable to contamination from human feaces.

- 55% of the household latrines are not in regular use by the respondents and only 45% are regularly used. The situation can be attributed to the fact that 30% of the existing household latrines have collapsed and 24% of the latrines are full. 42% of the latrines observed had intact superstructures.

- 24% of the households interviewed dispose their household solid waste appropriately. 62% of respondents put their solid waste in the Kusha, 17% burn the solid waste in the street, 14% put it in the street, 4% put it in the waste pit and 3% burn the solid waste in the compound.

- The main source of water for 77% of the household respondents is water yard, 16% traditional wells, 4% concrete apron, 2% hafir and 1% from wadi. The main source of water across all the targeted locations is water yard except for Abuhadeed location where the main water source is the traditional well (53%).

- 27% of the households take less than 30 minutes to get drinking water, 18% take between 1-2 hour, 54% take more than 2 hours, and 1% don't know the time.

- 60% of the households interviewed use between 6-10 jerricans(20litres) per household per day, 39% use between 1-5 jerricans and only 1% use over 11 jerricans per household per day.It was

therefore calculated that given that the majority of households comprises of 6-10 members, an estimated 68% of the households use 15 litres or less of water per day per person.

- 27 water samples taken from the targeted locations. 85% of the samples were contaminated and only 15% uncontaminated

- 37% of them mentioned not washing hand causes diarrhea, 47% mentioned flies, 11% worm, 46% eating dirty uncovered food, 49% drinking dirty/uncovered water, 9% mentioned diarrhea comes from Allah, 7% breastfeeding, 3% over eating and 13% don't know that causes diarrhea.

The baseline survey was conducted successfully and we recommend that:

1. Access to clean water is significantly acceptable; however there is need for more intensive training on water storage and treatment in order to mitigate possible contamination given the high level of contamination of most of the water sources.
2. There is need for campaigns and promotion targeting regular cleaning of water storage containers and promotion of a lid to minimize opportunities to contaminate drinking water. Household water treatment methods and behaviour change should be critical aspects to be integrated in the WASH program activities
3. Latrine use should be given more attention. The deplorable conditions of most of the household toilets necessitates immediate intervention that will focus on proper latrine use and behaviour change
4. Construction of community latrines and promotion of CLTS will go along way in addressing the poor sanitation infrastructure. Physical structural conditions and cultural sensitivity should be given consideration when designing sanitation infrastructure
5. Environmental and personal hygiene promotion should include all aspects of solid waste management as well as the management of common vector borne diseases at the household level. Household level health education can provide an opportunity to reverse current hygiene trends
6. Intensify community sensitization and awareness creation interventions on hand washing hygiene with focus on use of soap and running water. Emphasis should also be placed on the critical hand washing times or episodes. Use of drama, songs and skirts by local community groups can go a long way transforming hygiene behaviours in the localities.

2.0 Background and Introduction

2.1 Programme Overview

Tearfund's programme in Sudan began in 2004, responding to emergency needs generated by conflict. During this time, Tearfund's projects have provided critical services to people in some of the most isolated, insecure and badly affected areas of Darfur. Tearfund has combined the delivery of life-saving emergency responses in nutrition, water, sanitation and hygiene with longer-term help for communities in food security, education infrastructure and community development. Additionally, Tearfund has repeatedly responded to new emergencies in its area of operation.

Tearfund's work in Ed Daein, East Darfur (formerly of South Darfur) began in 2005. Initially the programme concentrated in Ed Daein and El Ferdous, working in El Neem and Salamat IDP camps respectively delivering water, nutrition and emergency response projects. In 2013, Tearfund continues to work in Ed Daein and El Ferdous, but also now works in Abujabra, Abumatariq, and Al Salayah. Since 2008 projects have also expanded to include education and food security and livelihood interventions. In 2013 Tearfund continues to respond to local emergencies as and when they impact on the vulnerable in East Darfur, but recognise the need to contribute to sustainable, durable solutions that promote recovery and resilience. Due to a relative improvement of the security situation in Yassin Locality, inadequate local access to basic services and recognising few humanitarian agencies exist in that part of the state, Tearfund is in the process of establishing a project within Yassin, moving further towards recovery, as opposed to direct humanitarian service delivery.

The incidents of Muhajiria and Labado early April 2013 and Um Gonia and other villages in south of Nyala March 2014 have led to the displacement of an estimated 2,200 households to Yassin, Abuhadeed and Selayleh areas. The IDPs in these locations do not have adequate health services and WASH facilities and are therefore forced to share all services with host community. Currently the IDPs and host communities are exposed to great public health risks as a result of this displacement. Following inter agency needs assessments carried out in 2013 and 2014 respectively Tearfund is currently providing WASH services in these localities. Based on this background TearFund undertook a baseline survey in order to establish the WASH baseline situation Yassin, Abuhadeed and Selayleh locations.

2.2 Baseline Survey Objectives

The overall objective of the baseline survey was to establish the baseline situation in terms of hygiene promotion, water supply, excreta disposal, vector control, solid waste management and drainage purposely to provide benchmarks and standards for future program assessment, monitoring and evaluation of WASH programs in Yassin, Abuhadeed and Selayleh locations. Specifically the baseline survey aimed at:

1. Establishing current hygiene knowledge, attitude and practice among the programme beneficiaries, in the Yassin, Selayleh and Abuhadeed.
2. Observation of hygiene practices in the beneficiary households
3. Assessing the levels of impact of the current hygiene promotion programs at the household level.
4. Assessing the current water and sanitation situation in the program areas.

3.0 Baseline Survey Methodology

3.1 Sampling

Appropriate sampling methods were employed during the baseline survey with 377 households participating. The household survey sample was based on stratified random sampling from a universe consisting of IDPs and host community residents within Yassin, Abuhadeed and Selayleh locations of the program area. A cluster random sampling was applied for the data collection. Numbers of clusters were selected on the basis of households and population. Random sampling was applied for the selection of household. To ensure homogeneity, the enumerators were instructed to cover the localities by following systematic random sampling. The choice of enumeration areas was made on the basis of the recommended villages by TF-Sudan Eastern Dafur WASH intervention which served as the strata for the purposes of sampling. Households were selected randomly in the study sites. The table below is the targeted population, number of households interviewed during the baseline survey:

Table 1: Targeted Baseline Survey Population

Location	Targeted Population	Targeted Household	Sample Size
Abuhadeed	4530	755	107
Selayleh	3000	500	71
Yassin	8400	1400	199
Total	**15,930**	**2655**	**377**

2,262

Majority 53% of the respondents interviewed during the baseline survey were from Yassin locations, 19% from Selayleh and 28% were from Abuhadeed locations respectively as shown in the chart below:

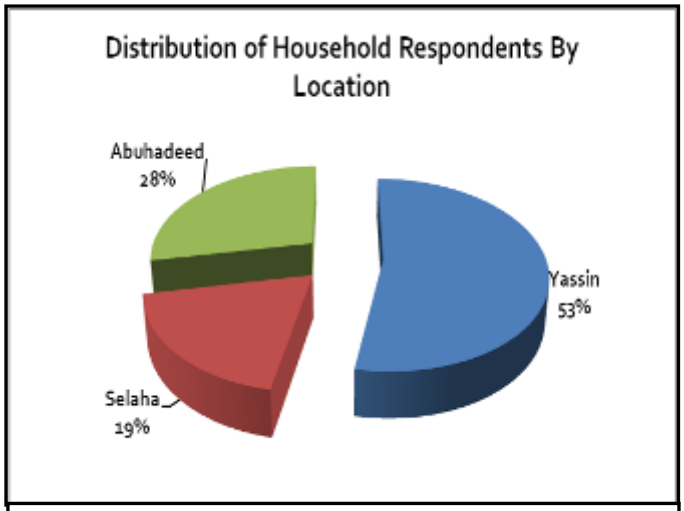

Chart 1: *Distribution of Household Respondents by Locations*

3.2 Survey Data Collection Tools

The KAP survey instrument consisted of a household questionnaire. The questionnaire (see Appendix)are comprised of a range of questions which included, demographic information, water sources, water treatment, water storage, water management, sanitation, hygiene, common diseases. All responses were unsolicited, so most questions included a space for "other" responses. The questionnaire was translated into Arabic to ensure precision in wording of the questions. The questionnaire was then field-tested by enumerators and necessary revisions made.

Enumerators were provided with guidelines to undertake observations, to observe the type of drinking water containers used, latrine quality and hand washing hygiene practices. The household observations were undertaken concurrently with the administration of questionnaires for mothers and children in each of the households.

3.3 Data Processing & Analysis

The data collection process commenced on 16th June 2014 and ended on the 19th June 2014. A total of 19 enumerators drawn from the targeted localities were trained to undertake the survey. The team interviewed a total of 377 household respondents.

Conducting a household interview

The enumerators underwent two-days training prior to conducting the survey so that they were able to prompt and record appropriate responses. Enumerators were recruited based on their intellect, knowledge of fieldwork and previous experience. The training was followed by a pre-survey test in a community not targeted in the survey.

Upon completion of the interviews in the field, the questionnaires were coded and entered using Excel spread sheet. This data was cross checked for accuracy. The data was then exported to SPSS 17.0 for analysis. Frequency tables were then used to discern tendencies and cross tabulations were used to compare sub-groups.

3.4 Survey Limitations & Biases

The following biases and limitations were experienced and mitigated during the survey:

1) Enumerator bias: The opinions of the enumerators and their supervisors can skew the results. For example, when enumerators show verbal or non-verbal responses to what is "correct" during the interview. The team tried to minimize this bias during training through role playing.
2) Social Desirability bias: Respondents may have an interest in providing incorrect answers because they think that they may benefit later, especially in the event that their responses lead to support

from donors. In each household, the enumerators explained the objectives of the baseline study to avoid this bias.

3) Confidentiality: In order to ensure the respondents' confidentiality, the enumerators were advised to make certain that crowds are not present during the interview and information collected was kept confidential.
4) Despite the tense nature of the targeted community due to conflict there were no reported cases of refusal to participate in the survey. The enumerators were generally well received.
5) Translation: Interpretation of questions may be different in Arabic compared to the original question in English. Accordingly, during the training session the survey team took sufficient time to translate the questionnaire into Arabic. The enumerators had the translated text in Arabic next to the questions in English.

To reduce the risks of bias, the survey coordinator undertook the following quality control procedures:

- Dedicated time and effort to select experienced enumerators.
- Started with a pre-survey (pilot test) and supervised enumerators during the study.
- Verified the completed questionnaires each day and provided feedback to the enumerators before conducting fieldwork the next day.

4.0 Baseline Survey Findings

The baseline findings were analysed in accordance with the baseline objectives in adherence to OFDA monitoring framework. The findings are presented herein thematically:

4.1 General Household Information

The OFDA supported program in Yassin, Abuhadeed and Selayleh locations targets 15,930 individuals. The baseline survey revealed the following household characteristics relevant to the WASH baseline survey:

4.1.1 Average Household Size

The baseline survey sought to establish the number of household members per household. In the context of the baseline survey a household size is defined by the number persons living together in one house. The survey revealed that 69% of the households interviewed comprised of between 6-10members,18% between 1-5 household members, 11% between 11-15 members and only 2% comprised of between 16-20 members as shown in the table below:

Table 2: Average Household Sizes

Number of Household members	Number of Interviewed	% of Households Interviewed
Between 1- 5 household members	68	18**%**
Between 6- 10 household members	262	69**%**
Between 11- 20 household members	43	11**%**
Between 21- 25 household members	4	**2%**

4.1.2 Household Heads

During the baseline survey 69% of the households interviewed were headed by males (farther) and31% were female headed (mother). It is a common practice has it that a number of household chores and domestic functions are the domain of females. This provides an inclination that most household hygiene and sanitation practices are therefore commonly practiced or managed by women. The characteristics of the targeted households in this case presents a scenario of significant number of female headed households hence providing an impetus for hygiene promotion within Yassin, Abuhadeed and Selayleh locations.

4.2 Level of Hygiene Promotion

In the context of this baseline survey hygiene promotion entails the promotion of good personal and environmental hygiene in order to protect health through enhancing community's knowledge, practice and access to resources. During the baseline survey the team collected information on the level of knowledge, practice and resources used by households used to avoid risky hygiene behaviors.

Hygiene promotion training

4.2.1 Hygiene Education

Hygiene promotion through educating the beneficiaries should be carried out with all groups within a targeted population. The baseline survey sought to establish the proportion of people receiving direct hygiene promotion in Yassin, Abuhadeed and Selayleh locations. The baseline survey revealed that 97% of the household respondents interviewed had not attended any hygiene education sessions at the time of the baseline survey. The chart below shows distribution of respondents by sessions/topics of household hygiene education:

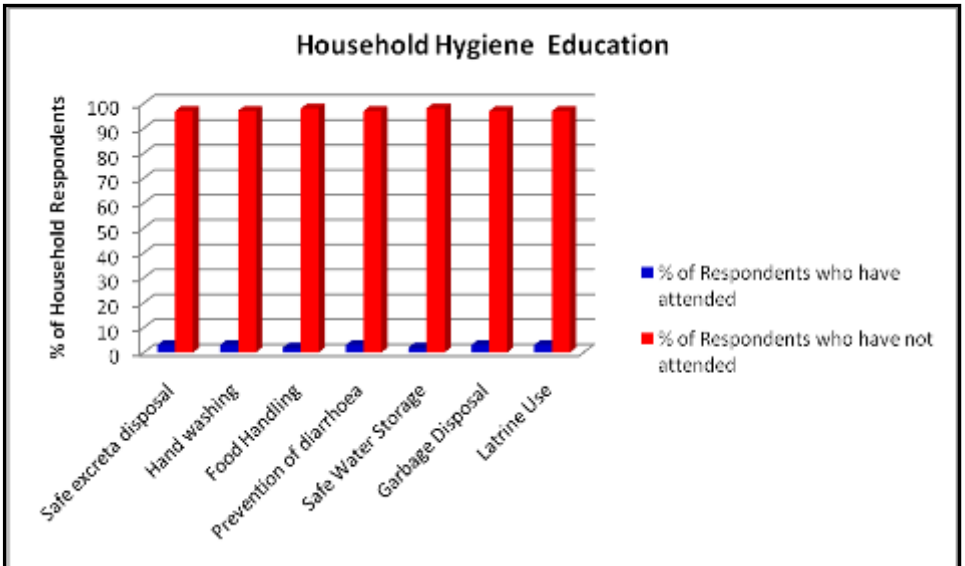

Chart 2: *Household Hvaiene Education*

4.2.2 Hand Washing Knowledge

Hand washing with soap is among the most effective and inexpensive ways to prevent diarrheal diseases and pneumonia, which together are responsible for the majority of child deaths. Hand washing with soap would make a significant contribution to meeting the Millennium Development Goal of reducing deaths among children under the age of five by two- thirds by 2015. Hand washing after defecation and before eating and preparing food is the most significant means of preventing the spread of disease. During the baseline survey the household respondents were asked about their knowledge on the 5 critical times to wash hands. The critical times highlighted were; before eating, after defecation, before preparing food, before feeding a child and after handling baby faeces. The survey revealed that the 49% of responders know 3 out of 5 critical times of hand washing with soap and 51% do not know 3 out of the 5critical hand washing times.

Chart 3: *Knowledge of Critical Hand Washing Times*

4.2.3 Hand Washing Capacity

In order to establish the household's capacity to undertake hand washing the baseline survey entailed structured observation of households with soap and water in hand washing locations. The survey team observed both soap and water at hand washing location in 34% of the households administered to during the baseline survey. It was however observed that 66% of the households in Yassin, Abuhadeed and Selayleh locations did not have any soap and water at the hand washing locations.

Chart 4: *Hand washing methods*

The survey also revealed the various hand washing methods used by the targeted households. It was observed that among the four main hand washing methods, there has been an overwhelming improvement in the use of soap and water.78% of the household responders use water and soap for their hand washing, 15% use water only, 5% use water and clean sand and 2% use water and ash.

4.2.4 Safe Water Handling

The baseline survey also sought to establish the proportion of households who store their drinking water safely in clean containers. Utilization of proper containers for water collection is a critical determinant in water safety at the household level. Adequate facilities and supplies to collect, store and use sufficient quantities of water for drinking, cooking and personal hygiene are important in ensuring household water safety. Ideally water collection and storage containers should always have narrow necks and/or covers. The baseline survey asked and observed the type of water collection containers used by the targeted households. The survey revealed that 68% of the households interviewed during the survey do not store their drinking water safety in clean containers and only 32% of the households store their drinking water safety in clean containers.

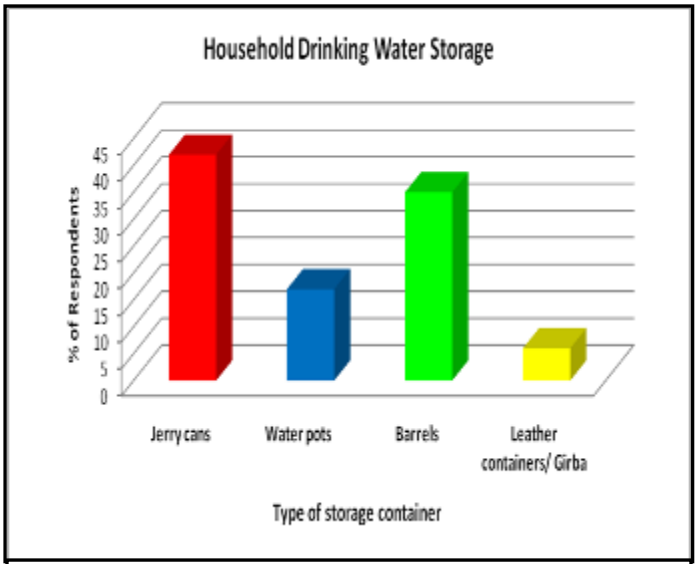

Chart 5: *Household Drinking Water Storage Containers*

Secondary contamination of water is commonly experienced during storage and transportation. It was observed that water safety during storage can be compromised and can be a significant health risk due to re-contamination. The risk can be improved through use of improved methods of storage practices and by using clean and appropriate storage containers.

The survey finding indicate that 42% of respondents store their drinking water in Jerry can, 17% in the water pots, 35 in the barrels and 6% store their drinking water in the leather containers (Girba).

Water jerricans as used in transporting and storing water

4.3 Sanitation Infrastructure

In the context of this baseline survey access to sanitation infrastructure entailed an assessment of the baseline situation with regard to excreta disposal and solid waste management. Broadly the survey sought to establish the proportion of households directly benefiting from sanitation infrastructure.

4.3.1 Excreta Disposal

Safe disposal of human excreta reduces transmission through direct and indirect routes. Safe excreta disposal should include provision of appropriate infrastructure for defecation. This baseline survey sought to establish the level at which the households within the targeted localities have access to latrines and their knowledge and practices with regard to the same.

The household respondents were asked where they commonly defecate. 71% of the respondents defecate in their household latrine, 16% defecate in open fields, 12% use shared latrines and 1% of the respondents defecate near their houses. It is noteworthy to mention that a significant proportion of the interviewed households practice open field defecation making the locations vulnerable to contamination from human feaces.

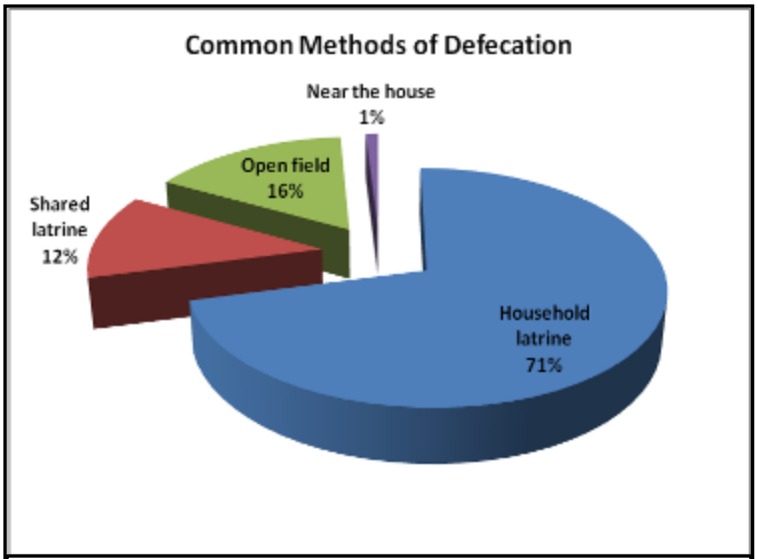

Chart 6: *Common methods of defecation practiced in targeted locations*

Toilets should be used in the most hygienic way and must be kept clean all the time. The survey revealed through structured observations and interviews with household respondents that 55% of the household latrines are not in regular use by the respondents and only 45% are regularly used. The situation can be attributed to the fact that 30% of the existing household latrines have collapsed and 24% of the latrines are full. The household latrines should be designed in such a way that they can be used by all household members including children, older people, pregnant women and physically and mentally disabled people. They should be able to provide some degree of privacy. The baseline survey revealed that only 42% of the latrines observed had intact superstructures.

4.3.2 Solid Waste Management

The baseline survey sought to establish how targeted households dispose their household solid waste. Major health risks occur when solid waste is not properly disposed. It is therefore imperative that the targeted communities should live in environment that is acceptably uncontaminated by solid waste and have the means to dispose of their domestic waste conveniently and effectively. The survey revealed that only 24% of the households interviewed dispose their household solid waste appropriately. 62% of respondents put their solid waste in the Kusha, 17% burn the solid waste in the street, 14% put it in the street, 4% put it in the waste pit and 3% burn the solid waste in the compound.

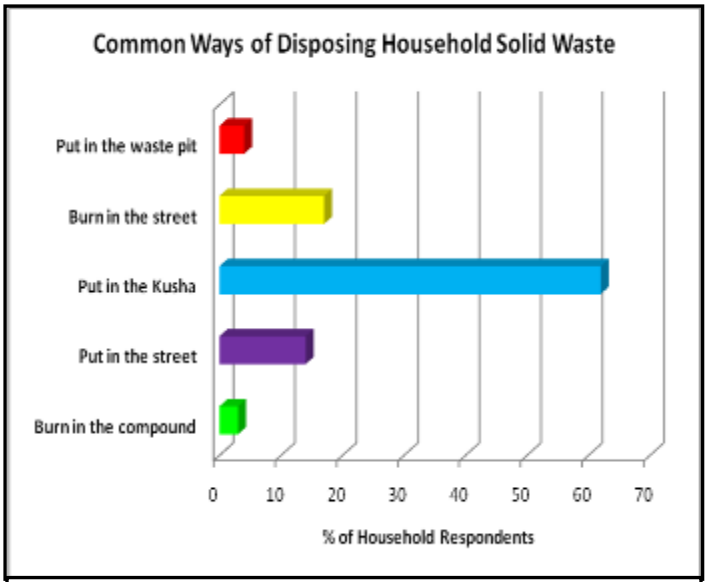

Chart 7: *Common ways of disposing household solid waste*

Household interventions should ensure that household waste is put in containers daily for regular collection, burnt or buried in a specified refuse pit. All households should have access to a refuse container.

Collecting solid waste using donkey drawn carts

4.4 Water Supply Infrastructure

Efficient water supply infrastructure should ensure safe and equitable access to sufficient quantity of water for drinking, cooking and personal and domestic hygiene in all localities. This baseline survey sought to establish water use, knowledge and practices of household respondents in in Yassin, Abuhadeed and Selayleh locations.

4.4.1 Main Sources of Water

The baseline survey established the proportions of households benefiting from water supply infrastructure within Yassin, Abuhadeed and Selayleh locations .An adequate amount of safe water is necessary to prevent death from dehydration, to reduce the risk of water-related disease and to provide for consumption, cooking, and personal and domestic hygienic requirements.

The survey revealed that the main source of water for 77% of the household respondents is water yard, 16% traditional wells, 4% concrete apron, 2% hafir and 1% from wadi.

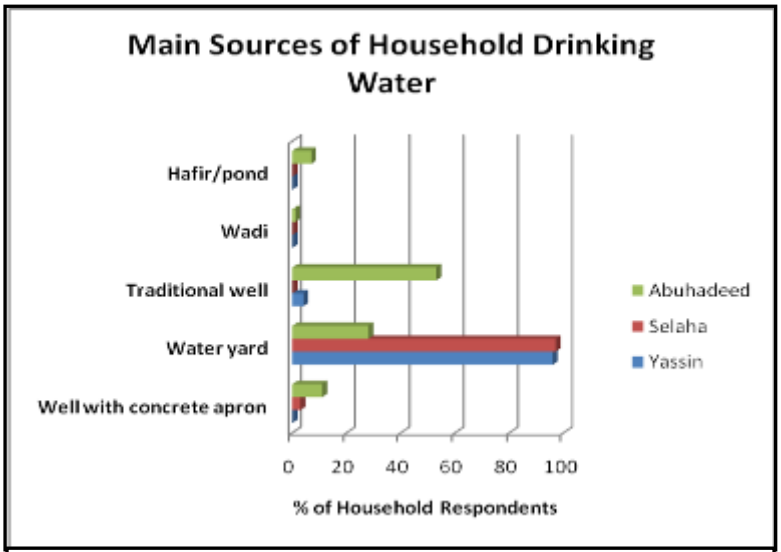

Chart 8: *Main sources of household drinking water*

The main source of water across all the targeted locations is water yard except for Abuhadeed location where the main water source is the traditional well (53%).

The baseline survey also sought to establish the general trend in terms of time required to fetch water by most households in Yassin, Abuhadeed and Selayleh locations. In the context of this survey time taken included the duration of time taken going to and from the water points including the time taken queuing. The survey revealed that 27% of the households take less than 30 minutes to get drinking water, 18% take between 1-2 hour, 54% take more than 2 hours, and 1% don't know the time.

Residents fetching water from a water trough in Yassin

4.4.2 Household Water Production

Utilization of adequate water quantities in households is critical for the achievement of ideal water and sanitation standards. According to the OFDA monitoring indicators the average water use for drinking, cooking and personal hygiene in any household is at least 15 litres per person per day. During the baseline survey the household respondents were asked to estimate the number of 20 litre jerricans used per day per household. The survey revealed that 60% of the households interviewed use between 6-10 jerricans(20litres) per household per day, 39% use between 1-5 jerricans and only 1% use over 11 jerricans per household per day.

It was therefore calculated that given that the majority of households comprises of 6-10 members, an estimated 68% of the households use 15 litres or less of water per day per person.

4.4.3 Source Water Quality

The baseline survey entailed analysis of the quality of water used by the targeted household in Yassin, Abuhadeed and Selayleh locations. It is important that all water used at the targeted households is palatable, and of sufficient quality to be drunk and used for personal and domestic hygiene without causing significant risk to health.

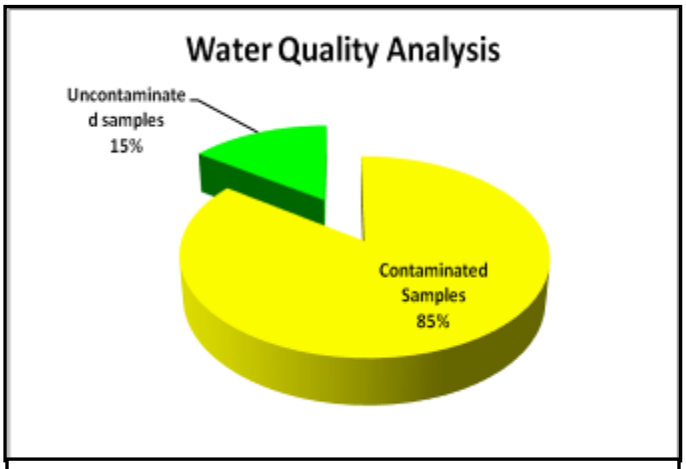

Chart 9: *Water Quality Analysis*

Faecal coliform bacteria (>99% of which are *E. coli*) are an indicator of the level of human/animal waste contamination in water and the possibility of the presence of harmful pathogens. If any faecal coliforms are present the water should be treated. During the baseline bacteriological water analysis was done for a total 27 water samples taken from the targeted locations. 85% of the samples were contaminated and only 15% uncontaminated as shown in the chart below:

Samples being tested for E.coli

4.5 Knowledge of Common Vector Borne Diseases

The most common vectors for disease transmission are mosquitoes and flies. House flies among other flies play an important role in the transmission of diarrhoeal disease. The baseline survey also focused on the general knowledge of the household respondents on diarrhoea as a common vector borne disease

4.5.1 Diarrhoea

The survey entailed questions on the household respondents understanding of the causes of diarrhoea. 37% of them mentioned not washing hand causes diarrhea, 47% mentioned flies, 11% worm, 46% eating dirty uncovered food, 49% drinking dirty/uncovered water, 9% mentioned diarrhea comes from Allah, 7% breastfeeding, 3% over eating and 13% don't know that causes diarrhea.

Vector-borne diseases can be controlled through a variety of initiatives, including appropriate site selection and shelter provision, appropriate water supply, excreta disposal, solid waste management and drainage, the provision of health services, the use of chemical controls, family and individual protection.

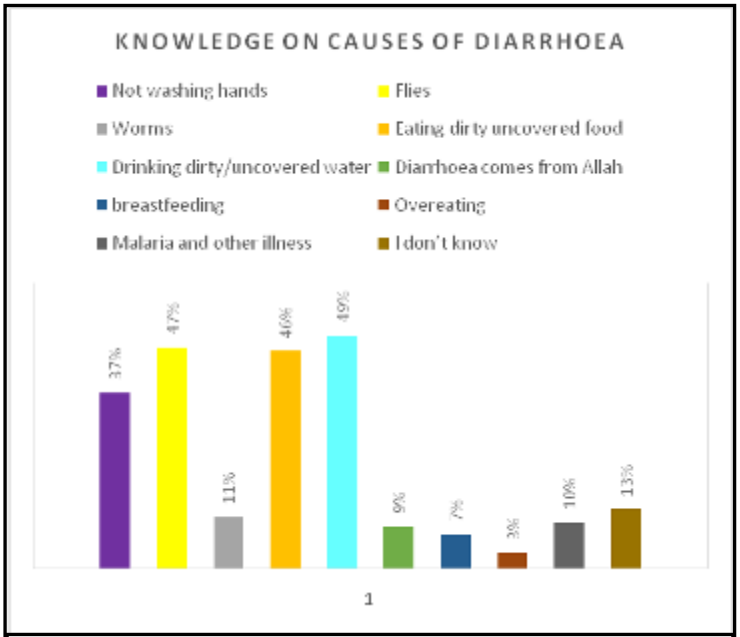

Chart 10: *Knowledge on causes of diarrhoea*

5.0 Conclusions & Recommendations

The baseline survey was conducted successfully and we recommend that:

1. **Water Supply Infrastructure:**

- Access to clean water is significantly acceptable; however there is need for more intensive training on water storage and treatment in order to mitigate possible contamination given the high level of contamination of most of the water sources.
- There is need for campaigns and promotion targeting regular cleaning of water storage containers and promotion of a lid to minimize opportunities to contaminate drinking water. Household water treatment methods and behaviour change should be critical aspects to be integrated in the WASH program activities

2. **Sanitation**

- Latrine use should be given more attention. The deplorable conditions of most of the household toilets necessitates immediate intervention that will focus on proper latrine use and behaviour change
- Construction of community latrines and promotion of CLTS will go along way in addressing the poor sanitation infrastructure. Physical structural conditions and cultural sensitivity should be given consideration when designing sanitation infrastructure

3. **Hygiene**

- Environmental and personal hygiene promotion should include all aspects of solid waste management as well as the management of common vector borne diseases at the household level. Household level health education can provide an opportunity to reverse current hygiene trends
- Intensify community sensitization and awareness creation interventions on hand washing hygiene with focus on use of soap and running water. Emphasis should also be placed on the critical hand washing times or episodes. Use of drama, songs and skirts by local community groups can go a long way transforming hygiene behaviours in the localities.

Appendices

Appendix 1: Baseline Household Questionnaire

Date التاريخ	
Surveyors names أسماء الماسحين	1.
	2.
Locations المكان	

Section1 General Information

1.1 Who is the head of the HH (✓ Only one answer)

من هو رب الأسرة ؟ (اجابة واحدة فقط)

		1	2	3	4	5	6
A	The Father الأب						
B	The Mother الأم						
C	Other please / specify (حدد) أخري						

1.2 Number of people in the household

عدد افراد الاسرة

1	2	3	4	5	6

Section 2: Hygiene

2.1 Have you ever attended hygiene promotion training? هل سبق أن حضرت تدريب في مجال تعزيز الصحة

Put Yes or No ضع نعم او لا	1	2	3	4	5	6

2.1.1 If Yes اذا كانت الإجابة نعم

What topics were covered in the training? (Tick all answers provided by respondent)

ما هي المواضيع التي شملها التدريب (أشر بوضع علامة على كل الاجابات التي ذكرها المجيب)

		1	2	3	4	5	6
A	Hand washing غسل الأيادي						
B	Safe excreta disposal التخلص الجيد من النفايات						
C	Food Handling مناولة وتحضير الطعام						
D	Prevention of diarrhea الوقاية من الاسهالات						
E	Water storage تخزين الماء						
F	Garbage disposal التخلص من الأوساخ						
G	Use of latrine استخدام المراحيض						
H	Other *(write answer)* أخرى (اكتب الإجابة (						

2.2 When do you wash your hands? (✓All they say) Repeat this question many times
متي تغسل ايديك كرر السؤال عدة مرات

		1	2	3	4	5	6
A	After Toilet بعد المرحاض						
B	Before eating قبل الأكل						
C	After eating بعد الأكل						
D	After helping baby do toilet بعد إزالة براز الطفل						
E	Before feeding baby قبل إرضاع الطفل						
F	Before cooking قبل الطبخ						
G	Coming from work/the field بعد المجئ من العمل / الحقل						
H	All the time (If say this try to get them to name times) كل االوقت فصل						
I	When they are dirty عندما تتسخ						
J	Morning الصباح						
K	Evening المساء						
L	Before prayer قبل الصلاة						
M	Don't Know لا اعرف						
N	Other(أخرى (اكتب إجابة						

2.3 What do you normally use to wash your hands? (✓Only one answer) (إجابة واحدة)ماذا تستعمل عاده لغسل يديك

		1	2	3	4	5	6
A	Soap and water الصابون و الماء						
B	Water and ash الرماد و الماء						
C	Water and clean sand الرملة النظيفة و الماء						
D	Water الماء						
E	Others (specify) (حدد) اخري						
F	Don't Know لا اعرف						

2.4What causes diarrhoea in children? (✓All thattheysay)
ماهي مسببات الاسهال بالنسبة للأطفال ؟ (ضع علامة صاح على كل ما يقوله)

		1	2	3	4	5	6
A	Not washing hands عدم غسل الايادى						
B	Fliesالذباب						
C	Worms الديدان						
D	Eating dirty /uncovered food الطعام الوسخان						
E	Drinking dirty/ uncovered water الماء الملوث / الوسخان						
F	From God من الله						
G	Breastfeedingالرضاعة						
H	Overeating الأكل الكثير						
I	Malaria & other illnesses الملا ريا و إمراض أخرى						

J	Other (write answer) أخرى (حدد)						
K	Don't Know لا اعرف						

2.5 How do you prevent diarrhoea (✓All they say) كيف يمكن ان نمنع الإسهال عند الاطفال ؟
(ضع علامة صاح على كل ما يقوله)

		1	2	3	4	5	6
A	Cover food تغطيه الطعام						
B	Clean raw food before eating نظاقه الخضروات التى تاكل طازجه قبل الاكل						
C	Wash hands غسل الايادى						
D	Drink water from hand pump or water tap-or boil or treat شرب ماء من المضخه الماسوره و المغليه و المعالجه						
E	Store water in covered container /avoid contamination خزن الماء فى اناء مغطى تحاشى التلوث						
F	Use a latrine and keep it clean استخدم المرحاض و حافظ على نظافته						
G	Dispose of rubbish safety التخلص الامن من الفضلات						
H	prevent flies منع الزباب						
I	Exclusive breastfeeding الاكثار من الرضاعه الطبيعيه						
J	Keep clothes/ body clean المحافظة على good personal نظافة الملابس/ الجسم hygeine						
K	Safe disposal of child's faeces التخلص السليم من براز الطفل						
L	It can't be prevented لا يمكن تجنبه						
M	Other correct اخرى صحيحه						
N	Other wrong *(write answer)* أخرى خاطئه (اكتب الإجابة						
O	Follow advice from traditional healer اتبع نصيحه المعالج البلدى						
P	Don't Know لا اعرف						

Section3 Water:

3.1 Where do you get your <u>main</u> drinking water from? (✓ Only one answer) من اين تحصل على مياه الشرب ؟ ((ضع علامة
صاح على إجابة واحدة فقط)

		1	2	3	4	5	6
A	Well with hand pump المضخة						
B	Water tap connected from borehole ماء الماسورة						
C	Well with concrete apron الآبار المحمية						
D	Water yard دونكي						

E	Traditional well لآبار التقليديه						
F	Wadi الوادي						
G	Haifer/pound الترع أو الحفائر						
H	Don't Know لا اعرف						
I	Other *(write answer)* أخرى (اكتب الإجابة)						

3.2 How long does it take you by foot to fetch water (time for going, queuing and coming back)? كم من الزمن يستغرق جلب الماء (زمن الزهاب والوقوف في الصفوف والرجوع)

		1	2	3	4	5	6
A	< 30 minutes أقل من 30 دقيقة						
B	30 minutes – 1 hour من 30 دقيقة إلي ساعة						
C	1 – 2 hours من 1 إلي 2 ساعة						
D	> 2 hours أكثر من 2 ساعة						
H	Don't Know لا اعرف						
I	Other *(write answer)* أخرى (اكتب الإجابة)						

3.3 Where do you store your drinking water at home?
أين تخزن مياه الشرب في البيت ؟

		1	2	3	4	5	6
A	Jerry can جركانة						
B	Water pot زير فخار						
C	Barrel /s برميل						
D	Leather container /s(Griba) قربه						
E	Others /Specify (حدد) اخري						

3.4 How many Jerry can of 20 litter of water do you use every day for your whole family (observe and fill in all that
They say) كم جركانة سعة 20 لتر من المياه تستهلكها الاسره في اليوم(لاحظ واملا ما يقولون)

		1	2	3	4	5	6
A	one Jerry Can (20L) جركانة واحده (20 لتر)						
B	2Jerry cans جركانتين						
C	3 Jerry cans 3 جركانة						
D	4-5 Jerry Cans 5-4 جركانه						
E	6-8 Jerry Can 8-6 جركانه						
F	10 Jerry Cans 10 جركانة						
G	Other (specify) (حدد) اخري						

3.5 **How can you make water safe for drinking? (✓All they say)** كيف يمكن أن نجعل الماء صالحا للشرب (ضع علامة صاح على كل ما يقوله)

		1	2	3	4	5	6
A	Boil الغليان						
B	Add chlorine إضافة الكلور						
C	Bleach/ or lime						

D	Sieve through cloth التصفية عن طريق القماش						
E	Water filter (siphon filter, bio sand filter) المرشح الرملي						
F	Solar disinfection تطهير الجراثيم عن طريق الشمس						
G	Sedimentation لترسيب صفه بدقة						
H	Use seeds (Moringa?) استخدام البزور						
I	Don't Know لا اعرف						
J	Other *(write answer)* أخرى (اكتب إجابة)						

3.6 Do you have any animals cows Kamal, sheep… etc? هل عندكم حيوانات(بقر، جمال، ضأن ...الخ)

Put Yes or No نعم او لا	1	2	3	4	5	6

3.7 If yes, how many animals do you own اذا كانت الإجابة نعم كم عندكم من الجيوانات

Put number ضع رقماً	1	2	3	4	5	6

3.8 And where do you collect water for your animals من اين تسقي حيواناتك

		1	2	3	4	5	6
A	Well with hand pump المضخة						
B	Water tap connected from borehole ماء الماسورة						
C	Well with concrete apron الآبار المحمية						
D	Traditional well لآبار التقليديه						
E	Wadi الوادي						
F	Haifer/pound الترع أو الحفائر						
G	Don't Know لا اعرف						
H	Other *(write answer)* أخرى (اكتب الإجابة)						

3.9 Observation الملاحظات

Observation الملاحظات	1	2	3	4	5	6
3.6.1 Hand washing غسل الأيدي						
Is soap available in house Y/N هل الصابون متوفر في المنزل نعم/لا		`				
E brick Y/N إبريق / وعاء للماء نعم /لا						
3.6.2 Is drinking water container هل إناء حفظ ماء الشرب						
Covered مغطىY/N نعم/لا						
Container clean Y/N نظيف نعم /لا						
raised from the ground Y/N مرفوعة عن الأرض نعم /لا						

Section 4 Sanitation:

4.1 How do you dispose your solid waste in your hose? كيف يتم التخلص من النفايات\ الاوساخ في المنزل

		1	2	3	4	5	6
A	Burn in the compound حرقحها في المنزل						
B	Put in the street وضعها في الشاررع						
C	Put in Kushaوضعها في الكوسة						
D	Burn in the street خرقها في الشارع						
E	Put in a waste pit وضعها بي حفرة اوستق						
F	Others /Specify (حدد) اخري						

4.2 Where do you normally go to defecate? (✓Only one answer) خيار واحد

اين تتبرز عادة

		1	2	3	4	5	6
A	Household Latrine مرحاض الأسرة						
B	Shared Latrine مرحاض مشترك						
C	Open fields الخلاء						
D	Near house قرب البيت						
E	Other اخرى						
F	Don't Know لا اعرف						

4.3 What are the advantages of using a latrine? ما هي فوائد إستخدام المرحاض(✓all that they say) كل الإجابات

		1	2	3	4	5	6
A	Prevents disease/ diarrhoea والإسهالات تجنب المرض						
B	Reduces flies يقلل الذباب						
C	Provides privacy يوفر الخصوصية						
D	Keeps village /area clean جعل القرية / المنطقة نظيفة						
E	Don't have to go far to defecate لا يذهبون بعيدا لقضاء الحاجة						
F	Feel good (good when have visitors) feel important يبدو جيد للضيوف						
G	Other *(write answer)* أخرى (اكتب إجابة)						
H	Don't Know لا اعرف						
I	No advantage ليس لديه فوائد						

4.4 Observation الملاحظات

Observation الملاحظات	1	2	3	4	5	6
Latrine المرحاض						
Is latrine being used? If not any reason why?						
Covered مغطى Y/N نعم/لا						
Clean Y/N نظيف نعم / لا						
Has the latrine collapsed Y/N المرحاض منهار نعم/لا						
Is the latrine full Y/N						
Superstructure intact Y/N مسور نعم / لا						